Mattison (J. B.)

# COCAINE INEBRIETY.

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J. B. MATTISON, M.D.,

Medical Director, Brooklyn Home for Habitues.

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MEMBER AMERICAN MEDICAL ASSOCIATION, AMERICAN ASSOCIATION FOR THE CURE OF INEBRIETY, NEW YORK ACADEMY OF MEDICINE, NEW YORK MEDICO-LEGAL SOCIETY, BROOKLYN NEUROLOGICAL SOCIETY, MEDICAL SOCIETY OF THE COUNTY OF KINGS.

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Read Before the District of Columbia Medical Society, Washington.

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COCAINE inebriety has been denied. Dr. William A. Hammond, speaking of cocaine before the New York Neurological Society, November 6th, 1886, said: "He did not believe any dose that could be taken was dangerous," and later he asserted: "That there is any such thing as cocaine 'habit,' pure and simple, I emphatically deny."

Each of these opinions is unsound and dangerous. In a paper by the writer, read before the Medical Society of the County of Kings, Brooklyn, February 15th, 1887, on "Cocaine Dosage and Cocaine Addiction,"[1] one case of chronic cocainism, four deaths from single or repeated doses, and forty-six less toxic cases were cited; and, in a second paper, on "Cocaine Toxæmia," read before the American Association for the Cure of Inebriety, November 8th, 1887,[2] three more lethal and seventy-three non-fatal cases were noted, more than one hundred and twenty-five in all, making the most extensive *résumé* to that date presented, and impelling an editorial assertion from the *British Medical Journal*, that "if it were needful to produce more proof of the unsoundness of Dr. Hammond's statement, Dr. Mattison has effectually done this."

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[1] *The Lancet*, London, May 23d, 1887.

[2] *La Tribune Medicale*, Paris, January 1st, 1888.

In a third paper, "Cocaine Poisoning," read before the New York Medico-Legal Society, six more deaths and eighty more non-lethal cases were cited, making it needless to present added proof along the line of acute toxæmia from cocaine.

Regarding the other unfounded and unwarranted statement of Hammond, as to the non-existence of cocaine inebriety, it has been well said that "one well-attested case is worth a score of theories," and when the record of this paper is completed, detailing four cases of incipient and thirteen cases of well-marked addiction to that drug—cocaine only, no past or present rum- or poppy-taking—some leading to madness or death, it will, we think, prove beyond question the perniciousness and danger of Hammond's opinion.

There is nothing on this topic in American medical literature except two excellent papers, by Morgan, of Indiana, and Zenner, of Ohio, each detailing a case. All other writers have referred to the effects of cocaine on those who were, or had been, alcohol- or opium-users. While cases of this mixed addiction have been frequent, now, happily, decreasing, those of cocaine only have been rare, and becoming more so; yet enough to show, beyond question, another danger from a drug that, along certain lines, stands peerless and alone.

Koller told the world what marvelous power cocaine has as a local anæsthetic—a blessing unique, and one worthy his lasting honor.

From beyond the sea came, too, a story of this drug, which brought in its train degradation, despair and death, for it was the ill-starred zeal of an Austrian enthusiast, Fleischiel, who, in his wild extravagance, declared that "With cocaine in the treatment of alcohol and opium addictions, inebriate asylums would be a thing of the past;" a statement not only untrue, but one which, going the rounds of the press at home and abroad, brought wreck and ruin to more than the world will ever know, and most of them, alas, members of our own guild.

And why? Because many an unfortunate, who had gone down before the power of alcohol or opium, built high

hopes on this hapless assertion, and resorting to cocaine for relief, not only failed in that laudable endeavor, but added a new link to the chain of his addiction, compared with which the strength of the others was weak.

To best compass this subject, let me offer you what clinical study has given us touching chronic cocainism, its cause, consequence, and cure. Getting at once to the genesis of this disease, for such it is, we find that, like most cases of its less deadly congeners, opium and chloral, first given for relief of ill-health, body or mind, and persisted in, perhaps, beyond legitimate need, it creates a demand for continued taking that will not be denied. Of the cases we shall offer nearly all began under such conditions.

Some cases, doubtless, though, perhaps, not so recorded, have had their rise in the morbid desire of erratic neurotics to test the effect of new drugs, coupled with the baneful outcome of mistaken teachings as to acute and chronic cocaine-taking, to which we have alluded, and—like the glamour of De Quincey's writings, which, beyond question, have lured men and women to destruction—that have, doubtless, impelled more than one, relying on these untrustworthy guides, to resort to its use.

The first recorded fatal case from acute cocaine-poisoning was largely due to the hapless surgeon's reliance on the asserted use by others of large doses without ill-effect. How many less lethal cases having a like origin? How many, all unrecorded, both acute and chronic, may be traced to the false teachings of Hammond and Bosworth, teachings so inimical to the welfare of person and public?

That is a query more easily asked than answered, but one which may well make us pause and ponder. Safe it is to say, in the light of past evidence and of present facts, it behooves every well-wisher of his kind to stamp out such dangerous doctrine with every clinical proof at command.

Shrady: "To some persons nothing is more fascinating than indulgence in cocaine. It relieves the sense of exhaustion, dispels mental depression, and produces a sense of exhilaration and well being. The after-effects are at first

slight, almost imperceptible, but continual indulgence finally creates a craving which must be satisfied; the individual becomes nervous, tremulous, sleepless, without appetite, and is at last reduced to a condition of pitiable neurasthenia."

Shaw: "Once a man flies to cocaine for relief from 'cares that annoy,' he generally continues with such rapid strides toward such complete subjugation to its bewitching thraldom as but few will ever be rescued from by any power of will which they may be able to bring to their aid."

Everts: "It is a fascinating and dangerous intoxicant, the effects of which may be more difficult to counteract and renounce than are those of opium or its derivatives."

Hughes: "It is a remedy to be used with extreme caution and prudence internally, and the large doses reported as having been given are not ordinarily safe. It will bear watching. It crazes and kills quicker than opium. The possibilities for immediate harm are not only great, but the likelihood of remote damage when tolerance is established is not small. The cocaine disease, more pernicious than the morphine neurosis, is the certain entailment of its frequent administration, and its thraldom is far more tyrannical than the slavery of opium."

Clark: "This case," cited later, "has furnished me such positive proof of a lurking danger in the use of cocaine that all the negative evidence or hypothetical assumptions published or adduced cannot have the least impression in causing me to relax for an instant the most rigid supervision of every patient to whom I in any manner administer or apply the drug."

Zenner: "Cocaine, even to a greater degree than alcohol or morphine, weakens the will and produces character degeneration."

Ring: "I would not be willing to take the responsibility of a like continuance"—case noted—"with any patient; neither would I put it in the hands of one to be used at his discretion. Take a man who is ill, down-hearted, unable to work, and subject him to my experience, and what would

become of him? Would he not be in imminent danger of becoming a cocaine *habitué?*"

Clouston: "In cocainism the craving is, perhaps, greater than for any other stimulant or narcotic whatever, and it is the most absolute destroyer of inhibition and the moral sense that we yet know."

Morgan: "Cocainism is the worst of all known drug diseases, and the most rapid in its action."

Mattison: "I think it, for many, the most fascinating and seductive, dangerous and destructive drug extant. It may be toxic, sometimes deadly. It may produce a diseased condition—in which the will is prostrate and the patient powerless—a true toxic neurosis, more marked and less hopeful than that from alcohol or opium."

The most ensnaring way of taking cocaine—or any narcotic—is subcutaneously, and this is the usual form of chronic using. We have, however, the record of cases where its inception was by mouth, as a stimulant, as an external application to subdue the pain caused by eruptions, as a local anæsthetic, or as a nasal spray. This phase of the subject is soon disposed of; most cases have had their origin in a legitimate use of the drug, thus proving, with fullest force, the paramount importance of personal professional care to insure complete quitting when the proper need is ended.

We now enter upon another phase that is appalling, for of all drug-wreckers of mind and body cocaine leads the list. Taken hypodermically its effects are transient, and, coupled with a fascination peculiar to itself, some *habitués* get to taking it very often—repeating the dose every fifteen or twenty minutes, for hours. This rapidly reaches a large aggregate—sometimes sixty grains a day—and easily explains the havoc that soon ensues. Its destructive energy is unique. For swiftly pernicious, profoundly perturbing effect on functional well-being, it has no equal, and as an acute killer of moral sense it stands alone. Well has it been styled "the devil's own drug;" well has it been said, "he must gloat with special delight to see a poor wretch tampering with cocaine;" and truly has Erlenmeyer written: "He who has

seen the sudden, lightning-like, mental, moral and physical destruction of one who has given himself up to cocaine, will let every optimism array itself against it."

The diagnosis in well-marked cases is not difficult. In some, the cause is patent; in others, especially morphia cocainists, if concealed, a consensus of peculiar psychical and physical symptoms, confirmed by a few hours' vigil, and made complete by finding cocaine in the urine, proves the disease beyond dispute.

To tell, most tersely, the sequences of chronic cocaine-taking, we shall note its effects in detail.

Digestion.—In the larger number of cases the earliest ill results refer to this function. Of all drug destructives cocaine is the most absolute anorexic known. Fully under its influence all desire for food is lost—patients going for days without a morsel. As might be expected, this failure in supply does damage along nutrient lines, and coupled with its direct, pernicious effect on glandular activity brings about emaciation more quickly and in larger degree than any other known drug. Thirst, too, is in abeyance, but both may return when the toxic effect is lessened or suspended.

The buccal cavity, in some, becomes dry and tender, the pharyngeal muscles painful, deglutition difficult, and the gums, tongue and throat take on a peculiar reddish hue. Other signs of gastric disorder may present—odorous breath, coated tongue, eructations, and painful digestion. In the bowel it induces torpor—no action for days, and then only by superactive purgation—or forceful, spasmodic action, with fæces hard and dry.

Respiration.—Vaso-motor defects in this system are hurried, depressed breathing, and dyspnœa—this especially on effort—due, in part, to direct effect and partly to impaired general tone.

Circulation.—Much more marked is the toxic action on the heart, and it is always the first effect of a full injection. The pulse quickly rises to 100, 120, or even 130, remaining so a half hour or more, and then, through one or

two hours, gradually reaching normal, unless requickened by a new supply. It has been known to remain 100 to 120 for months together. It may continue regular, but becomes fuller and rapidly quickened by effort. All this from vaso-motor paralysis, and this condition is a source of constant danger, for an overdose may speedily prove fatal from heart palsy; and another point worth knowing, as Erlenmeyer has stated, this continued vascular relaxation makes extra-hazardous chloroform anæsthesia in cocaine *habitués*.

Liver.—Fully jaundiced, or a pasty or yellowish-white color evidences the hepatic derangement; sometimes bronzed —Addison's disease like. A peculiar cadaveric complexion, better appreciated when seen than from any description, sometimes presents.

Kidneys.—Increased action at first; later, largely diminished. Sugar and albumen may be present; oxaluria; specific gravity high. On the bladder a semi-paralysis of the muscular coat, as in morphinism.

Skin.—Irritation or inflammation from the hypodermic-taking is rare. The immediate circle of the injected part is partially anæsthetized, and this may be, in part, protective against a common sequel of morphia-injecting. Later, boils, due to the general dyscrasia, may appear. The vaso-motor relaxation before noted obtains here, and sweating, profuse and prolonged, especially on exertion or excitement, is noted. Cold, clammy, limb perspiration, with body burning, or skin dry, cracked, and pallid, may ensue, and temperature may be depressed.

Sexual.—Cocaine, like opium, may first stimulate this function, but excess soon brings the effect of over-goading, and, sooner than with the poppy salt, comes loss of desire and power, and impotence complete. This, purely functional, is quickly and fully recovered from on quitting the cause.

Nutrition.—Next to the nervous system and brain, this is the field in which cocaine does its wickedest work. No other drug equals its tissue-wrecking power, emaciation from continuous use being constant and decided, sometimes

extreme. Two factors do this. First, the effect of the drug in abolishing all food desire cuts off the needed nutrient supply. Added to this is its pernicious result on glandular action, which, enormously increased by its stimulating effect, not only disposes of all nutrient material ingested, but as that—being so far below normal, as has been noted—is insufficient, the body tissues are levied on to correct the accelerated metabolism and consequent defect. To a minor extent this defect is observed from single or limited doses, for they will cause salivation, lymphatic swellings, and even swelling and hardening of the mammary gland; but largely and steadily taken, this ill result is greatly intensified, and makes one of the most marked and disastrous sequelæ of excess. According to Maerkel, on this vastly increased cell-action depends the stimulant effect; "but exactly in this accelerated metabolism lies concealed the same danger, perhaps even greater, as in every other extravagance in the organism, constructed and operated on principles of the greatest economy. From temporary use of the drug injurious effects on the organism are little to be feared, because the waste of nutrient material can, in great measure, be replaced; but when the drug is habitually used, it is very improbable that the supply of nutrient material carried to the glands is sufficient to correct the defect caused by their increased action. To confirm this view we have the fact that, in South America, persons who use coca die mostly of phthisis, which is brought on partly by lymph stream disorder and metabolism, and in part by premature wearing out and consumption of parenchymatous cells of the lymph-making tissues."

Nervous System.—As might well be expected, here is the second largest field for destructive work of this drug. This, like its action on nutrition and the brain, is largely due to its peculiarly fleeting effect, and which compels such frequent—more largely than any other narcotic growing by what it feeds on—increased taking. Many opium *habitués* maintain a fair avoirdupois and nerve status for quite a time. So may chloral-takers, but not so with cocaine. It ravages along all nervous lines, and so leading up to the higher brain

centres, stamp its ruinous power unique. At first merely over-activity; then the reaction and wreck sequelling hyper-stimulation; soon come the signs, known in part to you all, of typical wretched neurasthenia, all the more wretched by the consciousness of the miserable victim that he is daily adding to his anguish by the pressure of a power he is helpless to resist. Among these symptoms, with some, is a peculiar unrest—almost constant movement—which becomes in marked cases such as we have never noted in poppy or chloral *habitués*. Soon insomnia, absolute and intense, ensues. Nights and days together patients go without sleep, and when it does come, it is often robbed of its restfulness by horrid dreams.

Fugitive pains—sometimes shock like in the limbs—not so distinct, decided, and localized as in chloralism, occur. All the special senses become affected. Sight: Brilliant eyeballs, dilated pupils, light intolerance, object distortion, and hallucinations. One patient now under treatment had not been in her room a day before she had rearranged the furniture to keep out a new-found "Peeping Tom." Touch: Over-sensitive; hot and cold chasing; air-draughts, like a storm-blow; bugs and reptiles race each other; "the touch of a vanished hand." Hearing: Over-acute and hallucinatory—"the sound of a voice that is still." Taste and smell are impaired, blunted, distorted, hallucinated.

In this connection may be mentioned one symptom which we have never noted in any drug *habitué* other than cocaine, and which Heinemann thinks due to the action of that drug on the skin, though we regard it from morbid brain action. It is the patient's idea of some substance—worm, or glass, or splinter, or drug—under the skin; notably the finger-tips, for which they'll dig with knife or needle till the parts are raw. Magnan cites such cases. One always scraping his tongue and thought he was extracting little black worms. Another made his skin raw trying to extract cholera microbes, while another was constantly looking for cocaine crystals under his cuticle. One patient, a physician, now under my care, declared his microscope disclosed a

parasite; and his wife had in lesser degree the same delusion. This symptom seems *sui generis*, and presenting so often affords added proof in suspected cocaine-taking. Illusions and hallucinations run riot, and, added to varied, varying delusions, soon make the cocainist a fit subject for a mad-house.

While the ravages of cocaine along somatic lines excite surprise and alarm, one stands still more appalled at its ruinous "lightning-like" effect on the higher brain-centres—ideation, intellection, and the morale. Here it has no peer. Here it proves itself "the most powerful and devilish drug which it has been the misfortune of man to abuse." Here it shows itself unique for "debasing enslavement" of volition, and for "diabolical and indescribable general demoralization." Toxic brain effects appear soon in some cases; as a rule, not till the doses are large, or the taking excessive. Among the earliest are hallucinations of most, or all, the senses to which we have alluded. Illusions and delusions, sometimes illusions first, are added to and intensified by the others. Take this triple deliriant factor, and little wonder the cocaine inebriate finds himself compassed by a legion of horrors that drive him to distraction. These are realized ofttimes by the patient as being mythical and absurd, yet he is hopeless to control them. He may discuss things intelligently, yet cannot be convinced of his vagaries.

The most prominent hallucinations relate to hearing; the most important—regarding diagnosis—to touch. All—illusions, delusions, and hallucinations—in marked cases are mainly of persecution. Here again is a point of diagnostic import. In other drug manias—morphia and chloral—impulses to kill are largely suicidal. Not so cocaine, but homicidal, distinctly, and almost without exception. These rise from two causes—one fear, horrible, ever-present fear, either of an avenging pursuer, the outcome of a previous delusion as to some criminal act, or to escape persecution; to resent proposed restraint, or avenge some fancied grievance. This impulse to kill seldom leads to assault unarmed; but making himself a sort of walking arsenal the frenzied cocainist,

without purpose to harm any special person, may rush through house or street, firing, regardless of result. Of course this delusion will likely be more special and deadly in one of normal revengeful spirit.

The aural hallucinations cause more unrest and distress than the visual, and the unseen enemies or burglars may lead to reckless shooting. A case of that kind is now under my care. No ill will; no sense of persecution; no avenging desire, but a fancied burglar—an active fusilade and badly damaged surroundings.

Saury is right in speaking of a special delirium—essentially hallucinatory—due to cocaine. Disturbance of ideas is not primary; it confines itself constantly to sensorial troubles. All the senses may be affected, but in unequal degree. Disorders of general sensibility are markedly prominent; then come hallucinations of sight, then hearing, smell, and taste, all of which may be varied and painful.

Ideation and intellection become weak and distorted. Visionary schemes, absurd business ventures, and wasteful extravagances may obtain. Another special feature—especially in physicians—is sometimes marked, even in incipient cases, as will be noted later: a peculiar mania as to the panaceal powers of cocaine—a universal balm, lauded loudly for the most varied diseases. So striking is this in some cases that it may sway the diagnostic balance in suspected cocaine-taking.

Another peculiar feature is the refusal of the patient to regard cocaine-taking as the cause of his ill-health. He may admit the former, but that the latter is its sequence he denies. In a case brought to my notice not long since, this was marked. It was a typical one of pure, primary addiction, two years' duration, having its genesis in a nasal spray. The man was mad—having delusions of persecution that had led up to an attempted assault, and his arrest. The somatic symptoms were also decided, but the patient, while not denying his cocaine-using, thought his illness due to other cause. More—and this is notable in some cases—he felt quite sure, despite his confirmed addiction, he could quit the cocaine at will.

Under the lashing effect of this drug ideas are evolved rapidly, and find expression in surprising volubility. The loquacity is sometimes extreme, and if noted after a supposed cocaine-quitting may well excite distrust. Especially common, too, as Erlenmeyer has said is a certain prolixity in conversation and correspondence, which, when united with a weakened memory, may lead to the greatest embarrassment and confusion. General listlessness and inaptitude for brain-work are notable. The brain spur soon expends itself on doggerel verse or trashy prose.

On the *morale* the results are deplorable. The *personale* of some cocainists is greatly changed. One cleanly, tidy, almost Brummell-like, becomes dirty, careless, unkempt to a degree. The nastiest patient under my care was a cocaine *habitué*.

Of more import is the change in higher attributes. Lying—more than with opium—selfishness, and malicious intent, if the drug be debarred. The claims of friendship and affection are disregarded; family ties, the care of children, social and domestic duties, are neglected, while religious duty and the authority of ritual superiors are ignored and denied.

After this recital, gentlemen, you may think me an alarmist, a pessimist. Yes, truly so, everlastingly so as regards chronic cocainism, speaking whereof I know, and quite agreeing with Erlenmeyer, who wrote of it: "It is a sorrowful picture I have drawn, but I fear I have not selected colors dark enough."

Prognosis.—The prognosis of chronic cocainism is bad. The prospect of lasting cure, except under prolonged treatment, is not good. Acute recovery can usually be assured and secured; but the risk of recurrence is large—more so than any other toxic neurosis, save, perhaps, morphine-cocaine addiction.

The seventeen cases here cited make a capital clinical picture of the mind and body havoc caused by chronic cocaine-taking. They emphasize the peril of careless using, and the need of caution in every case.

Luff: Male. A five per cent. solution was applied by brush to nasal membrane to relieve catarrh. The effect was so seductive that the patient continued it for three years, with occasional short intervals, using five to eight grains per day. It caused insomnia, bowel torpor, gastric and heart derangement, indecision, inaptitude for work, and proneness to seclusion. Its quitting, under medical care, was followed by great depression and strong desire to recur, but under massage and tonics, in six weeks he recovered.

Lanphear: Physician. Hay-asthma; three years addiction, at first irregular, now steady. Eight grains daily by snuffing, in solution. Anorexia and emaciation were the prodromic signs of the cocaine disease. As further proof, any attempt to decrease the dose caused great nervousness, mental depression, weakness, vertigo, and other symptoms quite like those of abstinence in the morphine disease.

Ring: Physician, aged twenty-five. Cause, nasopharyngeal disease; using spray, four per cent. solution, nightly, one drachm, two grains. At the end of a month effect less, and increase needed. Already insomnia noted. At end of fourth month increased frequency of taking; later, growing insomnia and anorexia. Still further increase—four or five times before retiring, and once during day. Decreasing appetite, nerves unsteady, staggering gait, temperature higher, heart quicker; becoming listless, no interest in work or friends. Now realized the drug becoming a necessity, and quit.

Atwood: "Physician, young, vigorous, and intelligent. Habits pure and manly. No one better than he knew the insidious and pernicious influence and effect of "the devil's own drug," and yet he was rapidly becoming a cocaine habitué, when, fortunately, I suspected the *raison d'être* of his peculiar conduct and succeeded in arresting the downward tendency of a most estimable gentleman and worthy physician. The origin was in my prescribing for him a powder of cocaine and bismuth subnit. in the treatment of an annoying coryza, which was used by snuffing. Unfortunately the doctor experienced instantly the stimulating and energizing influence of the drug upon both mind and body, and as in

other cases, continued it. Naturally this gentleman was reticent and dignified. At once, on taking the drug he became loquacious and boyish, talking rapidly and constantly, while his muscular structures, stimulated to action, manifested extreme restlessness. The exhilarating influence generated ideas of great physical strength, the existence of which he was persistently anxious to demonstrate to every one, male and female. These phenomena, so foreign to the ordinary conduct of the doctor, attracted attention and comment, and gave rise to the opinion that he was drinking alcohol in some form. Suspecting the real cause, I charged him with having become addicted to cocaine. He immediately confessed such was the case. He was loud in his praise of the drug's wonderful influence, but lamenting his folly, at once quit its use, and has since totally abstained."

Clark: "In July, 1885, a young man applied to me for relief from what he called a 'severe and persistent case of hay fever.' He had consulted a large number of physicians without obtaining relief. He claimed he only wished help for a time, until he could arrange to leave for the West, having lost hope of cure in this climate. I prescribed cocaine muriate, 8 grains; aq. camph., 6 drops; aq. distil., 1 ounce; with directions to pour a small quantity in the hand and snuff occasionally. Three or four days later he appeared at my office, his face radiant with hope that he had found a specific, and said he had felt better the last few days than for a year. He had exhausted his medicine, and I consented to having the prescription refilled. I heard no more of the case till in November, I was in a drug store and was asked, 'Do you know Mr.—— is using about $8 worth of cocaine a week?' I expressed surprise, forbade further sale, and at once called, but failed to find the young man. I then asked his parents if they were aware of their son's excess. They said they were not, but had noticed peculiar symptoms which alarmed them. I explained the case and expressed doubt of serious result if the drug were at once ended. I was mistaken; the young man became insane, and required three months' strict supervision."

The doctor adds: "This case has given me such positive proof of a lurking danger in the use of cocaine, that all the negative evidence or hypothetical assumptions, published or adduced, cannot have the least impression in causing me to relax for an instant the most rigid supervision of every patient to whom I, in any manner, administer or apply the drug."

Haupt: Boy, aged fourteen. By suggestion or direction of his mother—a morphine-cocainic—began the use of the drug hypodermically. He rapidly increased, so that at the end of three months he was taking more than 60 injections of a five per cent. solution daily, using over 45 grains of cocaine.

Before using he was a hearty, well-developed lad, but now showed marked signs of brain and body wreck. He was marasmic, skin bleached, dry and yellow, extremities cool and covered with cold sweat, and his arms, the site of injecting, were studded with indurations. His sleep and appetite were irregular. His condition of mind was worse than body. His talk was low, nasal, incoherent, and almost unintelligible. When told to write he did so tremblingly and incoherently. He evinced no interest in anything except for cocaine and a syringe. His entire life the last few weeks was like a dream. Toward the close he seldom left his bed, would not allow himself to be washed or dressed, and passed bowel and bladder contents under him. Delirium and hallucinations appeared, especially at night. These were combined with great irritability and anxiety which often increased to convulsions. This case compelled asylum care.

Brower: Physician, aged thirty-one; hay asthma; three years' duration; daily taking 60 grains by mouth and skin. Effects: anorexia and impaired digestion; sluggish bowels; quick, feeble heart; rapid, shallow, irregular breathing; skin dry and pallid; copious urine, albumin, and oxaluria; sexual power lost; mental excitement alternating with depression; excessively emotional; reflexes exaggerated; memory impaired; excessive loquacity; hallucinations of sight and hearing; six months' sanitarium treatment; recovery.

Brower: Physician, aged fifty-six; hay fever and overwork; one year's addiction by mouth and skin; amount unknown. Anorexia complete; alvine torpor; weak, quick, irregular pulse; slow, shallow breathing; feeble, staggering gait; profound nervous depression; impotence; urine scanty, specific gravity high, sugar and oxalate crystals; visual and aural hallucinations; violent mental excitement; sudden death.

Brower: Physician, aged sixty-three; cause, morbid curiosity, experiment; five years' duration; skin and mouth, 10 to 40 grains daily. Effects largely like last case; same hallucinations; marked neurasthenia; mental excitement.

Crothers: Male, aged thirty-six; neurotic ancestry; had narrow escape from drowning, two months' brain fever followed; excessively nervous after; took cocaine, by advice, to relieve this; repeated, at first, nightly; full narcotic action after short exhilaration; five years' duration, by mouth and syringe; effects markedly neurasthenic. Tried to supplant it with alcohol, and became a rum drunkard; usually paroxismal and insanely wild unless saturated with spirits. General paralysis supervened; one year later, death.

Taylor: Physician, aged twenty-five; cause, renal trouble; several years taking hypodermic injections; amount unknown; reckless using. "Would fill syringe and run needle through trousers." Result largely like that of morphinism: mental effects more marked than somatic: "Had absurd business attractions, tried to sell things not his own;" attracted much attention on account of his crazy acts. Visited professionally, he lamented his addiction, but would not agree to end it. Became violent and vowed to kill himself or others who might try to restrain him. Was put in an asylum, but escaped. Placed under private care, with a strong guard over him, he finally recovered.

Merriman: Physician. Began the drug for relief of headache; continued it several months, with result of profound neurasthenia and mental defect.

Burr: Male, aged thirty-five. Began cocaine for relief from hay fever; continued six months, reaching a hundred

grains per week. Three weeks before admission to asylum, he became maniacal soon after taking a larger dose than usual, and was removed to hospital; elated and extravagant conduct; expansive delusions. Thought himself a superior being, and the only link between himself and the world was tobacco. Threatened violence. Pulse, 100; mental operations over-active; expression restless, elated, and suspicious; memory poor; general conversation boastful and extravagant. Noisy at night, assaulted patients. In a few days elation gave place to depression, and this soon followed by excitement. Condition improved by treatment. In six days slept without aid; in nine much more quiet. In fourteen, regained self-control to allow his having freedom of grounds without attendant. In six weeks much improved; in fourteen was dismissed, cured.

Clouston: Young professional man; took cocaine hypodermically as stimulant to do work; duration, eighteen months; initial dose, ½ gr., rapid increase; at end of six months was taking 45 grs.—probably more—a day. At times 10-grain injections. In three months rapid moral and mental damage: Dirty habits; neglectful, truthless, and sleepless, often up all night. Then actual insanity, visual hallucinations, and loss of memory. No power to work; did strange motiveless acts. Imagined people talking about him and accusing him of crime. Was impulsive and could scarcely restrain himself from assaulting imaginary tormentors, with whom he remonstrated on the street. All the while, half conscious of morbid brain action, and that he might have had delusions.

When first seen was excited; skin pale and muddy; pulse irregular, 98; limbs and trunk scarred with hypodermic needle. Was placed under treatment and drug rapidly withdrawn. Reflex reaction lasted a week, "was most miserable." Then ate well, slept well, and walked much. Became cheerful and accepted restraint. "But it is certain he could no more, of his own accord, have carried out that treatment than he could have gone to the moon." He was plausible, full of promises, and cock-sure of not again using

the drug. His bodily health improved. He gained twenty-eight pounds, but the power of the drug and the damage to his will were shown by his resuming cocaine the first chance that presented.

Zenner: Physician, aged thirty; cause, overwork, and tried cocaine as tonic; began with five to eight drops four per cent. solution, hypodermically; continued once daily for two months, then tried to quit, but failed. Once feeling overtired, took large dose; became exhilarated, drove six miles to nearest city, took a dose *en route*, and then became reckless. Neglected business, drank to excess, and had to be cared for by friends. He now took larger doses and more often, ten to twenty minims two to six times daily, keeping in constant excitement. In three months business gone, property lost, and himself nearly ruined. Took, suicidally, sixty minims of ten per cent. solution. Later, asserted abstinence for one month. Then, while using cocaine in a surgical case, chancing to feel depressed, took a hypodermic injection, instantly unchaining the tiger. For two months took ten drops of a ten per cent. solution every three hours. Would remain in his office all night, repeating injections. Soon came depression, forebodings, and delusions of persecution. Feared everything; dared not venture out after dark, imagined himself to be arrested for some crime. Delusions became so active that he ran away. The demon still pursued him, driving him, frenzied, from place to place. Had hallucinations of sight and sound; saw ghosts, grinning devils, and heard millions of voices. Forcible restraint, and after three weeks' delirium in bed, was himself again. Had two later attacks, each ending in acute delirium and a mad-house. His entire addiction was less than two years, with four short abstinence intervals. Mental trouble always greatest at time of largest using. During latter part of taking, took twenty drops of a saturated solution every two or three hours. Had frequent syncope and intermittent pulse, 140 to 150 per minute. Heart action rapid throughout, and was 90 to 110 for three months after cocaine quitting. Insomnia extreme, sometimes entire week without sleep. Was anorexic, often

vomited, and became much emaciated. After the second attack, realizing his danger, he requested longer asylum detention, became an attendant, and there remained.

Morgan: Physician, aged thirty-four, having a nasal trouble, began using a four per cent. solution by atomizer to relieve pain. At first applied two or three times daily, but soon it was required every few hours. This failing, the strength of solution was increased to twenty per cent. Lastly, atomizing was replaced by snuffing, and the daily amount increased to one drachm, sometimes more. Perception and memory were notably increased during the early taking, but when the daily amount reached 60 grains, illusions, hallucinations, and delusions appeared. At first it was easy to mentally correct the illusions; the addition of hallucinations rendered correction more difficult; and latterly, the majority of the manifestations admitted of no explanation except their reality, and consequently were believed. The victim was conscious of the absurdness of the mental states, and discussed them with his friends, but could not be convinced of their true character. The illusions and hallucinations were those of persecution, and made the daily life of the patient one of horrors. The imaginary persecutors worked mostly at night, and so the patient reasoned that the insomnia caused by the cocaine would the sooner enable him to capture his tormentors and so end his troubles.

The cocaine demand was most urgent in the evening, beginning usually about four o'clock and lasting till two or three in the morning. The going of the delusional persecutors was coincident with the urgent demand for sleep, and this would continue till eight or ten o'clock every morning. Often, however, twenty-four hours were passed without sleep. Nervousness was pronounced; slight inco-ordination; pulse steady and quick, 120 per minute for hours; respiration disturbed; cold feet and creaking knee-joints; heavy, dragging lumbar pain, most intense when largest taking. Toward morning, exhaustion and sleep, with profuse sweating of peculiar odor; urine increased and dark; headache and toothache frequent. The patient's disposition was greatly

changed; usually reticent, he made a confident of everyone. Moral sensibilities and social responsibilities were obtunded and unappreciated; became indifferent to most important affairs; suspected intimate friends as his persecutors.

Three friends—physicians—told him his troubles were imaginary, due, they thought, to cocaine, and advised his placing himself under special care for treatment, but their opinion was denied and advice rejected.

The patient, however, realized something was wrong. Appetite was gone, sleep disturbed, was losing weight, and his mental state was disturbed; but all was attributed to unknown enemies from unknown cause, hounding him to death. This in some might have led to assault, but the question had been well discussed and the patient induced to give up weapons.

Travel was decided upon to escape his tormentors, but to no purpose. He drove from one part of town to another; changed his hotel three times in one night, but in each case found his Nemesis in an adjoining apartment. Police aid was asked, but only added to the trouble. He was at last impressed with the belief that he was going mad, and, acting on advice of friends, he placed himself under special sanitarium care. The cocaine was withdrawn, but not without reflex results, among others a renewal of the special demand for the drug on the third, sixth, ninth, and the twelfth days, persisting twenty-four hours. Then two intervals of a week, and two of a month. The last bout lasted one week, and tortured the patient beyond all previous experience. He remained under treatment several months, gained forty pounds, and recovered.

Harvie: Male, aged twenty-five. Began cocaine in spray by advice of physician for relief of sore throat. In three months health began to fail. Appetite impaired, stomach deranged, heart disturbed, liver disordered, bowels relaxed, skin dry and yellow, lips parched, face drawn. Became nervous, irritable, sleepless, and insanely jealous. Had hallucinations and delusions. "Scarcely two nights passed that he did not rouse the household to search for robbers." Was

in almost constant unrest; could not be quiet five minutes to read, write, or talk. "His nervous system has been almost ruined."

Was placed under care of a charlatan, who in nine weeks dismissed him "entirely cured." First night after his return, resumed cocaine, and added morphine. Again placed under treatment without success. Latest tidings unhopeful, and the chances are that the case will end in a mad-house or a grave-yard.

*Treatment.*—In recent cases the drug can be quit at once, and the resultant reflex irritation met with codeine, one to three grain doses, to control pain and unrest, and trional, thirty to forty grains, to secure sleep. Later, galvanic and faradic *séances*, with internal tonics and favoring conditions for several months are required.

In marked cases more robust measures are essential. If the body well-being be not greatly impaired—otherwise a tonic course should precede—rapid reduction, six to ten days, coupled with a minor degree of preliminary sedation, after the writer's plan, "The Mattison Method in Morphinism," can be used. As a partial substitute for the cocaine, caffein-sodii benzoas, one to three grains hypodermically, will be found of value, and for the pain and unrest, as well as insomnia, phosphate of codeine in full doses, one to two grains subcutaneously, or double by mouth, will prove effective. If needed, narcein will add to the codeine effect. Morphine should not be used. Alcohol should be withheld unless imperative. If so, it may be given as alcohol—not brandy or whiskey—and always with milk or other food, or hypodermically. The risk, in treating these cases, of causing a new form of drug addiction should never be forgotten.

After the acute effects of quitting have subsided, the same indications for treatment will present as after morphine-ending, to be filled along like lines in the same way as detailed in the writer's paper before mentioned.

In some cases, more so than in the morphine disease, restraint will be needed. For reasons stated this should be as mild and brief as is consistent with the welfare of the patient,

the object being to re-educate and restore the depressed will power, and this can be done in some cases by mildly coercive measures rather than the reverse. With others, however, absolute and prolonged restraint is imperative. The importance of a protracted roborant *régime*, varied and constant, with freedom from work and worry, obtains more largely in this and morphine-cocainism, than any other drug disease. The peculiar, overmastering fascination of cocaine, its strong, almost resistless, tendency to retaking in the early weeks or months of abstinence, make this essential. In marked cases, six to twelve months, or even longer, must be taken in which, if at all, to get thoroughly well. The importance of prolonged hygienic care and favorable surroundings, after active medical treatment is ended, in these cases cannot be overestimated, and *they are absolutely essential to effect a lasting cure.*

Prospect Place, near Prospect Park, June, 1893